PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
cim		
International application No.	International filing date (*day/month/year*)	Priority Date (*day/month/year*)
PCT/CU 2004/000006	22 April 2004 (22.04.2004)	23 April 2003 (23.04.2003)
International Patent Classification (IPC) or national classification and IPC		
IPC[8]: C07K 16/46 82006.01)i, A61K 39/395 (2006.01)i		
Applicant		
CENTRO DE INMUNOLOGIA MOLECULAR		

1. This international preliminary examination report has been prepared by this International Preliminary Examination Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

   I. ☒ Basis of the opinion

   II. ☐ Priority

   III. ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

   IV. ☐ Lack of unity of invention

   V. ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   VI. ☐ Certain documents cited

   VII. ☐ Certain defects in the international application

   VIII. ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
16 November 2005 (16.11.2005)	13 January 2006 (13.01.2006)
Name and mailing address of the IPEA/AT Austrian Patent Office Dresdner Straße 87 A-1200 Vienna Facsimile No. 1/53424/200	Authorized officer MOSSER R. Telephone No. 1/53424/437

Form PCT/IPEA/409 (cover sheet) (July 1998)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/CU 2004/000006

I. Basis of the report

1. With regard to the **elements** of the international application:*

☒ the international application as originally filed

☐ the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____.

☐ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement) under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____.

☐ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____.

☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____.

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.

☒ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____.

☐ the claims, Nos. _____.

☐ the drawings, sheets/fig _____.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as „originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/CU 2004/000006

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 21, 22.

because:

☒ the said international application, or the said claims Nos. 21, 22 relate to the following subject matter which does not require an international preliminary examination *(specify)*:

Remark: Although claims 21 and 22 concern the treatment of the human or animal body by therapy or a method of diagnosis practised on the human or animal body (see PCT Rule 39.1 (iv)) the examination was carried out and based on the alleged effects.

☐ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. are so unclear that no meaningful opinion could be formed *(specify)*:

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for said claims Nos.

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/CU 2004/000006

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-26	YES
	Claims	---	NO
Inventive step (IS)	Claims	1-4, 7-12, 14-17, 19, 21-24	YES
	Claims	5, 6, 13, 18, 20, 22, 25, 26	NO
Industrial applicability (IA)	Claims	1-20, 23-26	YES
	Claims	21, 22	NO

Citations and explanations (Rule 70.7)

Considering the applicant's argumentation in the response to the written opinion (dated 25.11.2004) the examiner does not agree with the opinion of the applicant. The applicant argues that the subject-matters of claims 5, 6, 13, 18, 20, 22, 25, 26 are inventive, because it is difficult to produce humanized chimera antibodies/fragments. It is true that the production of chimera antibodies is not a one-way street process. However, the scope of claims 5, 6, 13, 18, 20, 22, 25, 26 is very broad. These claims concern much more single chain Fv fragments that are really produced. For many antibody fragments the technical problems which go hand in hand with antibody production were solved. The technical difficulties which were solved by the applicant where respected; this is one reason why the subject-matters of claims 1-4, 7-12, 14-17, 19, 21-24 are inventive. These claims concern functional phage-displayed antibody fragments for which the technical difficulties are solved. Only the subject-matter of these claims is supported by the description in a way so that an inventive step can be seen. Therefore, the examiner cannot change his opinion. The following text of the written opinion is a part of this examination report.

Text of the written opinion:
EP 0972782 B1 concerns the murine 14F7 monoclonal antibody produced by the hybridoma with the deposit ECACC 98101901. The present application concerns humanized antibodies derived from said 14F7 monoclonal antibody.
EP 1013761 A2 relates to a humanized chimera antibody comprising a variable region of a mouse monoclonal antibody which is reactive with ganglioside and a human antibody constant region.

A person skilled in the art knows that humanized murine antibodies are less toxic for humans than animal antibodies. EP 1013761 A2 shows methods for the production of hybrid antibodies. Therefore it is obvious that elements from murine and human antibodies can be combined to create new pharmaceutical tools, especially for the identification of tumor associated antigens and treatment of tumor cells. Accordingly, the

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box V (page 1)

subject-matters of claims 5, 6, 13, 18, 20, 22, 25, 26 are obvious from the above mentioned patent documents.

With sequence databases it can be shown that the sequences respectively the sequence combinations together with the14 F7 antibody are new. A skilled person does not know which combinations will be the best. Further, it is difficult to find suitable expression systems for the production of chimeric antibodies. However, the examples of the application demonstrate the inventive step of the application. Therefore, novelty and inventive step are recognized for the subject matters of claims 1-4, 7-12, 14-17, 19 and 21-24.

Cancer research, 1995, Vol. 56, No. 22, pages 5165-5172 reveals that unusual gangliosides expressed in tumors may provide the basis for immunological diagnosis and vaccine therapy. But the murine 14F7 monoclonal antibody and derivates thereof are not obvious from this document.

Claims 21 and 22 concern the treatment of the human or animal body by therapy (see PCT Rule 39.1 (iv)). Therefore, industrial applicability is not given for these claims. The industrial applicability for the subject-matters of claims 1-20 and 23-26 is self-evident.